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ORIGINAL ARTICLES.

THE HORSE'S FOOT.

By A. Zundel.

(*Continued from page* 208.)

LAMINITIS.

Synonym: *Behe, Verschlag, Hufentzündung*, German: *Fourbure, Fourbature*, French; *Rifondimento*, Italian; *Aguadura*, Spanish.

By this name is understood the bloody congestions of the keratogenous apparatus of ungulated animals. The increase of the circulating fluid produces a swelling of the living tissues of the foot; but these being enclosed in a box of so hard, resisting a material, a painful pressure results, which becomes specially common and serious in horses and other solipeds. It has also been observed in bovines, though it is then less frequent and serious. It has also been seen in sheep, in goats and in swine. It may, in fact, occur in all ungulated animals. Dogs, even, are not exempt from its attacks.

The simple bloody congestion, more or less inflammatory, of the keratogenous apparatus of the horse, is sometimes called *acute laminitis* and *acute founder*. The disease may pass off by resolution, leaving no traces of its occurrence, but more commonly it becomes complicated with some lesion of more important and serious a character, as hemorrhage, suppuration, inflammatory

exudations, and especially of a hypersecretion of the horny substances, in which case it becomes *chronic* laminitis or founder; an affection which gives rise to alterations of a peculiar nature, and leads to certain changes in the form and character of the hoof. We do not agree to the divisions admitted by several authors, into *traumatic laminitis*, *rheumatismal laminitis*, and *metastatic laminitis*.

I. *Symptoms.*—Laminitis, in most instances, is preceded by certain general symptoms, such as are premonitory of the invasions of ordinary inflammatory diseases, but of an uncertain significance. There is dullness, general insensibility, muscular tremblings, and stiffness of the loins. The respiration is accelerated, the pulse febrile, the mucous membranes injected, the mouth dry, the fœcal discharges dry and coated, the urine scanty; and perhaps anorexia is present. Rodet, who held that laminitis is more a secondary than primitive affection, and that it is simply an inflammatory anaisothermical fever which had localized itself, was obliged to acknowledge that this fever has nothing characteristic, and that it is always followed by laminitis.

It is certain, however, that but a short time elapses—from several hours to one or two days—after the originating cause has become active, before the bloody congestion of the reticular tissues and the peculiar phenomena belonging to the disease become manifest. It is only when the capillary circulation of the foot has considerably increased, and when the rigidity of the structure prevents the swelling of the podophyllous tissue, that laminitis truly exists.

Laminitis in the horse has the following principal symptoms: Considerable heat of the entire foot, extreme sensibility with intense pain, increasing rapidly, and obliging the animal to rest upon the sound legs, in order to relieve the affected ones; difficulty and uncertainty in walking; and sometimes a peculiar trembling of the muscles of the patellar face of the femur, and of those of the extensors of the fore arm, which fill the triangular space formed by the scapula and the humerus. The physiognomy always indicates intense suffering. The pulse is hard, the respiration increased, and the skin hot, and in places moistened by a

copious perspiration. These symptoms vary with the legs which are affected, whether the disease is located in the fore or hind feet exclusively, or in all four together. As Mr. Bouley says, it is a peculiarity of this affection that it may remain localized in the feet of one patient, either forward or behind, or may at once attack the four extremities, and that it seldom attacks the limbs on one side only, to the exclusion of the feet of the opposite side, *i. e.*, it may be laterally biped, affecting either both the fore or both the hind feet, but not often occurring otherwise. Sometimes, however, the disease is more marked in one leg than in the other of one biped. It is generally only after some traumatic lesion, or other local influence, that laminitis occurs in one foot only.

When laminitis affects the two anterior feet, the animal carcies its extremities forward, and the hind feet are brought well under the centre of gravity. The standing of the animal is altered, the walking difficult and painful, and the resting of the feet on the ground is done with hesitation and fear. The feet are carried forward, because the pressure takes place on the frog and on the heels; if it should occur as in the healthy and normal condition, upon the entire inferior circumference of the foot, there would be pressure upon all the living tissues, which are gorged with blood, tumefied and painful, and this pressure would greatly increase the sufferings of the patient. It is, then, to relieve himself, and to avoid the intensity of the pain, that the animal instinctively changes its mode of resting on the ground. In placing the heels down, the weight is borne only upon a follicular, fatty tissue; from there it spreads along the side of the coronet to the fetlock, and thus upon all the other portions of the leg, and in this way the foot becomes greatly relieved during the action of resting. If, however, the fore legs only were carried forward, the effect would be equivalent to lengthening the body of the animal, and he would be unable to carry on the action of walking. To allow the fore feet to be moved, it is necessary that the body be carried forward by the hind legs and brought closer under the center of gravity, a position which contributes also to the relief of the animal while at rest.

The more painful and diseased the feet become, the more the animal fears the impingement of the ground. Thus, so to speak, he sounds the ground before putting the foot down, and for this reason the walking becomes slow, stiff and difficult, and the noise of the contact of the foot louder than that of the healthy legs. Sometimes the animal proceeds only by a series of jumps, or a kind of rearing, while backing is especially difficult.

The hoofs of the foundered feet give to the hand, when feeling them, a sensation of heat greater than that in the physiological condition; a sensation which can be more readily detected by a comparison of the fore and hind feet simultaneously examined. The pains in the diseased feet are rendered more manifest, also, by percussion upon the hoof with the hammer, when each blow, however light, is followed by a motion of the animal in suddenly withdrawing his foot on account of the pain experienced. The lateral arteries of the fetlock, in the foundered legs, beat stronger than in health, and can be readily felt by the fingers. The feet cannot be raised without great effort, and when raised, the animal stands only with great difficulty, and makes struggling attempts to relieve himself and resume its natural mode of standing on four legs.

When laminitis affects only the fore feet, the animal will sometimes remain standing for a length of time together; he may retain this attitude for several days, without any displacement of his body; still he is observed moving *surplace*, from side to side, especially on his fore legs, relieving one foot for a moment to give the same comfort immediately afterwards to the other. But when, exhausted by fatigue and pain, the foundered horse lies down, it is very difficult to get him on his feet again. He continues in the decubital position, lying mostly flat upon his side, the fore legs in constant motion, and soon complicates his diseased condition by the addition of bed sores upon the prominent parts of his body.

The attitude of the animal is very different when the hind feet are affected; then both the anterior and posterior bipeds are brought close to each other, the feet of the hind legs being carried forward under the abdomen, so that the rest may take

place upon the heels; and the anterior ones are carried backwards, and nearer to the center of gravity, to assist the function of the hinder extremities in sustaining the weight of the body. In this case, the animal is constantly in side motion, on account of the pain he endures. Walking is still more difficult, and seems to take place as if the animal was treading on sharp needles, as, the more the anterior biped is engaged under the body, the more also those legs are loaded with the animal's weight, and the more difficult is their movement. But the anterior legs, contrary to their ordinary function (not being adapted to the support of an overshare of the body) sustaining now a great part of its mass, and moreover, compelled to assist in the act of propulsion, necessarily and inevitably become easily fatigued, and too often in their turn become likewise affected. Animals suffering with posterior laminitis are found occupying the standing position less frequently than those whose fore feet are affected. Their unsteady equilibrium, consequent on their mode of standing, tires them more quickly, and compels them to lie down, and once on the ground, it is again more difficult to make them rise. They may do so readily with the fore legs, but the posterior extremities do not always respond to the call.

The attitude of animals suffering with laminitis of all the four feet, is the same as of those which are affected in the fore feet only. All four feet are carried in advance of their plumb line, the anterior forward, the posterior well under the center of gravity. Sometimes the horse has all his feet somewhat apart, in order to carry the principal part of the weight on the inner side of the foot. The standing posture being painful to either foot, the animal lies down most of the time. Locomotion is very difficult and staggering, and the animal can only be induced to move by severe punishment, and even that cruel resort sometimes fails to effect it. If the animal is made to walk, he does it with the greatest difficulty, by reason of the increase of his sufferings, brought on by the displacement. His legs, stiff and trembling, are raised in a convulsive manner, and brought back to the ground only with the greatest hesitation, and upon the heels; the constant motion of the lips of the animal being well characteristic of his sufferings.

In the ox, laminitis is more frequent in the hind than in the fore feet. It is, however, more serious in the latter, the inner being more affected than the outer toe. The foundered ox walks with hesitation, and takes advantage of every opportunity to lie down. When standing, his back is arched, the feet closed together, the hind feet resting on the heels, the fore legs on the points of the toes. The fever is severe, sometimes attended with loss of appetite and of rumination. If the disease continues long, the cattle will die. The abdomen is stuck up and the animal loses flesh very rapidly, indicating a serious condition, as the disease is principally found in fat animals, which are obliged to make forced marches to be delivered at their markets.

(*To be continued.*)

ANTHRAX IN NATAL.

By S. Wiltshire, *Colonial Veterinary Surgeon.*

(REPORT TO THE COLONIAL SECRETARY.)

(*Continued from page* 220.)

CONTAGION.

As the germs of anthrax exist outside the system, chiefly, if not entirely, as spores which retain their vitality for long periods —especially when dried—we can understand the danger to healthy animals grazing over or frequenting the places where diseased ones have been, and particularly over spots where they have been buried.

Bearing upon this subject, my friend, Mr. J. W. Winter, M.R.C.V.S., has favored me with a valuable note—"I believe it is a proved fact that pastures upon which diseased stock have fed and died are inoccuous during the first season, but most fatal when the grass again springs. This would go to prove that it took some time for the generation and multiplication of the germs of disease before they could affect other animals feeding upon the grass of the same locality."

It appears to be necessary that the mucous membrane or the skin should be abraded for the disease to be contracted—except

by direct inoculation; hence we see the advisability of avoiding those places, and also stables, kraals, etc., where the sick have been. Men have often been poisoned by eating the meat of affected animals, or by handling the carcasses. Kafirs, I am told, have had bad sores after handling, or being brought in contact with, the blood and *débris* of bucks which have died of this disease; and many have died, or been sick after eating beef affected with redwater; hence the necessity for a rigid inspection of all meat offered for sale. The risk of contagion at the watering places along the roads will be recognized, as cattle often die near them, and, in such a hilly country as this, the remains, with the germs, are readily washed into them by the heavy rains. The spread of redwater is sufficient evidence of the vitality of its organism, and the facility with which it is conveyed from one place to the other, and its distribution through the media of the excretions and *débris* of cattle.

I do not think stabled horses can become affected when fed entirely on dry food; but when supplied with cut grass they are by no means safe, though the risk is not so great as to those which graze, as the latter do so in dangerous places, and bite close to the earth, while Kafirs cut longer grass and not so close to the ground as horses graze.

TREATMENT.

The treatment of animals affected with any form of this disease is somewhat unsatisfactory, as all will testify who have had experience.

As I pointed out in former reports, the proper agents to introduce into the system are antiseptics, that is, agents which counteract the poison and arrest decomposition of tissues; followed up by those which will restore the blood to its physiological condition.

For this purpose I have found the best results in both horses and cattle from the sulphite and hyposulphite of soda in 2-oz. doses, and the chlorate of potass in ½-oz. doses, combined sometimes with opium or digitalis, at others with an aperient; Epsom salts for cattle, and aloes for the horse, followed up during recovery by tonics and generous diet.

I have often been told by farmers and others that the treatment I recommended for redwater in 1877 has proved beneficial; so also that which I suggested for horse-sickness in 1878, if adopted early. This coincides with my own experience, notwithstanding the adverse criticism of those who never tried it, or who waited till their animals were beyond recovery before they did.

Excellent results have been obtained from the administration of turpentine, carbolic acid, carbonate of ammonia, salicylic acid, iodine, and other agents, introduced into the system in various ways; but, as the means adopted are hardly practicable here, where many of the animals—especially cattle—are so intractable, I cannot recommend their trial unless carried out under the direction of properly qualified veterinarians. In support of this, I may point out that the means of prevention are so simple, and have proved so effective, that I feel bound to urge a consideration of them, with a view to their adoption.

PREVENTION.

Bearing in mind that the sole cause of this disease is a solid particle which can only enter the system in one of three ways, viz., by the food, water, or inoculation, we must direct our attention to the surest means of keeping our pastures and streams free from infection, and to the most practicable measures for disposing of the carcasses and *debris* of animals, to the isolation of the sick, and to preventive inoculation.

The importance of preserving our pastures will be seen when it is clearly understood and recognized that the poison is thrown off in the fœces, urine and other excretions of the body, and from dead animals, so contaminating the veldt and water, by which means the outspan places become hotbeds of redwater, etc.

I have long urged that sick cattle, etc., should not be allowed to travel along the roads, and that all dead animals should be buried—as far as practicable in enclosed spaces, where animals are not permitted to feed—which measures, as well as the establishment of places for isolating the sick at certain points along the road, should, I think, receive the earnest attention of the Legislature.

On farms, measures should be adopted to isolate sick animals of every kind, so that contagious matter may be brought under the influence of disinfecting agents.

Various kinds of drugs with antiseptic properties are of value, but in view of the difficulty of administration and other practical objections, they are not likely to be used to any extent.

Fortunately, however, the patient and persistent investigations of scientific men have led to the discovery of means which promise an easy and effectual solution of the difficulties, if rightly and systematically applied. To Professors Pasteur and Greenfield, Dr. Buchner, and others, we are indebted for the discovery of modes of modifying the virulence of the contagium, by which means the disease can be produced in a mild form and animals rendered insusceptible to it for a time, in the same way as vaccination for small-pox, and inoculation for lung sickness.

The value of the protection conferred has been established by the most severe tests and convincing proofs. The benefit of such a course will be recognized by those who know how horses which have recovered from horse-sickness in the Transvaal can live in places that would be certain death to those unprotected.

Until this question is dealt with properly under a comprehensive scheme, I can only recommend that during the prevalence of disease all animals should be kept on the highest pastures available; that places where the dead have laid and sickness has prevailed should be avoided as much as possible. I consider that stabled horses, when fed entirely on dry food, are not liable to horse-sickness; but that they are equally susceptible if given grass or other matter containing the germs of the disease.

In the vicinity of towns the risk of turning horses out to graze is great, on account of the extent to which the veldt is contaminated; hence the importance of having animals buried in enclosed spaces, under the supervision of or by the local authorities, will be apparent.

In conclusion, I beg to point out that the investigation of disease is a most difficult matter, requiring prolonged and careful research, and the knowledge embodied in this paper is the result of the labors of many careful observers, who have noted and re-

corded the facts presented to their notice for the benefit of their fellow-workers. It has fallen to my lot to identify certain forms of the disease under consideration, and define to the best of my ability the causes giving rise to them.

Had my conclusions been illogical or erroneous, other laborers in the same field would have been ready to point out my mistakes; but their general correctness having been established, it now remains for those whose interests are associated with the pastoral, agricultural, and transport industries of this country, to determine whether, and to what extent, they will adopt the means of prevention which are calculated to protect their stock and prove of great public benefit. In view of the importance of this subject, no time should be lost in practically applying what has proved so successful in other countries, and by that means showing an appreciation of the science and progress of the age in which we live.

AN INQUIRY

INTO THE ETIOLOGY AND PATHOLOGY OF THE VENEREAL DISEASES OF MAN AND OF THE LOWER ANIMALS.

By Charles F. Ring, M.D.

(*Continued from page* 226.)

Professor Coleman, who was an authority of his time, and who argued the non-contagiousness of glanders, writes: "The malady (glanders) which broke out among the men engaged in the Walcheren expedition, attacked almost all of them; hence it was considered to be a contagious disease. Afterwards, however, it proved not to be, nor was this assumption required to explain its endemic character, for they all (if the expression may be allowed) ate it, they all drank it, and they all breathed it." (Quoted by Percival, *ibid*, vol. 35.)

This rapid imparting of the disease from one individual to another has even taken place in private families. "For example, where one has eaten from the same dish with a diseased individual, or where an entire family, consisting of man, wife and

four children, have been rapidly attacked one after another with the malady," glanders. (Bollinger, *ibid*, article Glanders.)

Now, it would be presumption merely were we to attempt to describe how this *glandered meat* was served to the soldiers during the famine of which we have been speaking, or that it even constituted a part of their diet at all, for we have nowhere read of anything that would justify us in making a statement like this; yet one thing, we think, will be admitted by all, viz: that we have theoretically, at least, accounted in the first place for the sudden outbreak of the epidemic in question, and, secondly, for its singular and destructive nature, and it now only remains to be determined, from what follows, whether this plague could have been produced by glanders conveyed from the horse to man after the manner indicated, or in any other manner, for that matter, the relation of the diseases *only* being the point in question.

What glanders is, and what are its effects on man and solipeds will next occupy our attention, but it may be well to state in the beginning that the subject is considered at such length (and necessarily so for its proper understanding) in the works we have quoted from, that we must refer those who desire more minute information to this source, and content ourselves with the more salient points of description.

GLANDERS IN HORSES.

"The most formidable of all the diseases to which the horse is subject," says Youatt (On the Horse, p. 121) "is glanders. It was described by writers fifteen hundred years ago, and it was then and is now not only a loathsome but an incurable disease."

Gamgee writes (Reynolds' System of Medicine, vol. I, p. 183) "This disease appears to affect the horse in all parts of the world, although perhaps it is modified to a certain extent by climatic and other agencies. In the deserts of Arabia it is said not to possess the dreadful characteristics which distinguish it elsewhere, and is a comparatively rare disease. It may occur under four forms, as 1st, chronic glanders; 2d, acute glanders; 3d, chronic farcy; 4th, acute farcy. Chronic glanders is the most common form affecting the horse. It is propagated by contagion and in-

fection (?) It never occurs as a termination of acute glanders. Its period of incubation is uncertain, and has been stated to vary from a few days to a year."

A description of the chancre of glanders reads very much like that of syphilis, to wit: "The chancre of acute glanders may sometimes cicatrize, but the mucous membrane is never regenerated at the spot it occupied, being replaced by a very dense white tissue, thicker than the membrane for which it is substituted, and it consequently stands above the surrounding level; the cicatrix is composed of fibres which radiate from the centre towards the circumference in a stellate fashion. The presence of this indelible cicatrix always betrays the loss of substance that has taken place in the membrane."

Again, "the chancre is sharply cut in the membrane as if it had been stamped out by a punch; this is surrounded by a very narrow indurated border, and has a *hard resisting base*, the bottom being gray and unhealthy looking; the characters of the borders and centre being due to the continual production of new cells." (Fleming, *ibid*, p. 510.) As a knowledge of glanders in the human subject is more important to the present discussion, we will proceed at once to a consideration of it.

GLANDERS IN THE HUMAN SUBJECT.

"No connection had been traced between the terrible diseases in the lower animals which have been briefly described and an affection which then, as now, must have occasionally affected those who had charge of horses suffering from glanders and farcy, until the year 1810, when Waldinger drew attention to the fact that special precautions ought to be adopted in the dissection of horses affected with glanders and farcy, inasmuch as the direst consequences, even death, might result from the inoculation of the purulent matter. The accuracy of the statements of Waldinger was supported by the publication, in 1812, of a paper by a French military surgeon, Lorin, who, under the title "Observations sur la communication du farcin aux Hommes," described the case of a veterinary surgeon who, having accidentally pricked himself whilst operating upon a glandered horse, suffered in con-

sequence from inflammation of the hand. The statements of Waldinger do not, however, entitle him to be considered the first person who pointed out that glanders is communicable from the lower animals to man, for although he stated that dangerous consequences might result from the inoculation of the purulent matter of glanders and farcy, he did not state that the affection induced in man in any way resembled that of the horse." (Gamgee, *ibid*, p. 186.)

"The stage of invasion, or the premonitory stage, commences with a feeling of indisposition or depression, and with peculiar wandering pains, followed by febrile excitement, shivering, great heat and uneasiness; soon afterwards there is pain affecting the muscles, simulating rheumatism and often mistaken for it. The pain generally attacks the extremities, and more especially the bend of the groin, the axillæ and neck, where upon careful and minute examination swellings may be detected, which are sometimes diffused and sometimes circumscribed, indicating glandular complication; these may disappear suddenly or be altogether absent. The fever soon assumes a more inflammatory character, the pulse being full 92–96, the skin is hot and dry, the face flushed, and the head heavy; there is want of sleep, the tongue is foul, the urine scanty and high-colored. Sooner or later, the second stage, that of eruption, takes place and at once develops the specific character of the disease. In acute cases this appears almost at once soon after the invasion, but in chronic cases there may be an interval of weeks. The eruption consists of a crop of pustules, remarkably hard, resembling the smallpox, and attacking the skin like an exanthem; it is said to be specific and pathognomous of the disease." (Holmes' System of Surgery, Vol. I, p. 701.)

Two interesting plates accompanying this description illustrate this eruption well. Immediately on seeing it one is reminded of the vulgar name "big pox," which was at various times applied to the epidemic.

Also in these same plates are shown subcutaneous tumors, which remind one very much of descriptions of syphilitic gummatæ; they are possibly the so-called "farcy sores," or "buds."

Gamgee writes: "The disease is usually ushered in by feelings of lassitude, headache, and rigors, frequency of the pulse, and often by vomiting and diarrhœa. Articular and muscular pains occur from an early period of the disease, and increase during its progress. The limbs and body become the seat of subcutaneous abscesses, which are frequently found on the face and near the articulations. A remarkable pustular eruption generally appears on the surface of the body, being specially found on the cheeks, arms and thighs." (*ibid*, p. 189.)

Let us review here, by way of comparison, a few of the symptoms of the "epidemic" which we have already considered.

"The prevailing epidemic," writes Petrus Pintar, "is characterized by a variety of symptoms, more particularly by keen and excessively violent pains. Some do not have any pains, in the place of which they are attacked by *pustules* of various shapes and sizes, being very numerous on some individuals, and on others more scanty. Sometimes the pustules break out only in the face or on the head, while the other parts of the body remain free; in other cases they are only seen on the abdomen; most frequently they break out on the thighs and legs, but may likewise spread over the whole body. Grenbeck states that the disease commenced with langour and debility of the limbs, after which the pustules broke out with intense fever; he adds, that whenever these pustules or tumors burst open they sometimes became converted into frightful phagadenic sores.

"The pains accompanying this eruption are sometimes so violent that the patients are deprived of their sleep for forty, sixty, and even a hundred nights together, after which the pains likewise assail the head. Others experience in their shoulders an indescribable feeling of stinging and weight; others again, experience the same pain in the elbows, knees, even in all the limbs and joints at the same time, so that they are unable either to walk or to stand, and have to abandon every kind of work."

But to return to glanders in the human subject. "Among the less frequent concomitants of the disease may be also mentioned specific tubercles and abscesses of the *glans penis*, testicles

(sarcocle, mallosa, verichon), and *kidneys*, specific papules of the choroid coat of the eye, and, furthermore, inflammation of the parotid gland.

In the nose the cartilages become exposed and necrosed, the septum, vomer and palate bones are disorganized. In the pharynx, larynx and trachea are frequently found papules and ulcerations. The growths and ulcerations in the larynx may lead to œdema of the glottes. The *cartilages* and *bones* are often involved secondarily in the destructive action of the adjacent specific affections, the ulcers and abscesses. In rarer instances the bones and periosteum are the primary seat of the specific growths and inflammatory process. In cases running a *chronic* course, with moderate ulceration of the nose and larynx, glanders may acquire a very strong resemblance to certain forms of syphilis.

"The contiguous parts become involved in the diseased process; for instance, if the disease is situated upon the head, the bones of the skull and face and more particularly the frontal bone are all affected, becoming necrosed; while even upon the inner surface of the skull, between the bone and the *dura mater*, purulent collections may be formed (*pachymeningitis externa*). In other cases tubercles may appear in the periosteum of the skull, in the *dura mater*, and even in the *plexus charoides*. In the *human subject*, just as in the horse, the *nasal affection often fails to appear until the latter stage of the illness*, which affords convincing evidence that in both species these symptoms cannot be regarded otherwise than pathognomonic.

Of the remaining tissues of the body, the *muscles* form unquestionably the most frequent seat of specific changes. According to Küttner, the specific nodules are mostly situated in the biceps, *the flexors of the forearm*, the rectus and the pectoratis, and finally at the point of insertion of the deltord." (Ziemssen's Cyclopædia, Vol. III, article Glanders.)

By way of comparison again, in later stages of these diseases, let us observe first what effect syphilis has on the muscular tissues, and, second, what affinities they have in a general way in common.

"The syphilitic disease may locate itself in the most various

muscles. The diffuse form has been found more especially in *the flexors of the upper extremities*, while the gummy tumors occur in the glutens, trapezius, sterno—cleido—mastoidens, etc. (Bäumler, *ibid*, p. 179.)

By referring more minutely to the pathology of these affections, it will be seen that the bones, special and otherwise, fall a prey equally to the two poisons, to wit: the bones of the skull, palate, vomer and nasal; the larynx, pharynx and trachea; eye, urinary organs and testicles; lungs, soft palate and tonsils; mouth, fauces and mucous membranes; ligaments, cartilages and joints; liver, spleen and nervous system; muscles, skin and lymphatic glands; and many other points of comparison too tedious to enter into here.

If the reader be not already convinced of the striking analogy between these two diseases, it would be a waste of time to endeavor to make this clearer when, after all, experiment, and not mere fancy, will determine the value of our views.

In regard to the so-called volatile nature of that epidemic, so strongly insisted upon by contemporary writers, and which we are not unconditionally inclined to dispute, the following may not be amiss: "Under the second class of modes of infection," continues Bollinger, "occurring without known local inoculation, may be observed the case of individuals who groom and have the care of glandered horses, and who sleep in a stall with the diseased animals, without in any way coming in contact with them, or who become infected by sleeping on straw upon which, shortly before, glandered horses have been standing."

Observed how easily, in this manner, glanders may be contracted without known local inoculation with diseased products, it will not be at all wondered at that soldiers (let us imagine) in a state of famine and degradation, compelled, as they are, to mess and sleep together, could impart to one another a disease like this, with the most frightful and alarming rapidity, thus probably giving rise to the belief that the epidemic could be communicated alone by the air. Even at this date it is not altogether a settled point that this cannot be done; most writers admit its possibility, but not its probability. Now, if glanders of the horse has

existed from the remotest antiquity, as we are told that it has, it may be asked why it never, prior to the epidemic we have been discussing, gave rise to a *syphilitic* disease. The only answer to such a question can be this, viz.: That while glanders has undoubtedly been communicated from the horse to man at different times since its existence, yet it never before was transmitted to a sufficiently large number to enable it through its passage from one individual to another to become milder and milder, and finally to limit its infecting centre to the sexual organs, and thus undoubtedly to become a *venereal disease.*

As vaccine can be inoculated on any portion of the body, and which generally becomes milder from a scab of the third or fourth generation, so we believe glanders—usually at first so fatal—became less quickly so after its passage through a number of individuals; and hence resulted, after long time, in the so-called syphilitic disease.

We are told that "for many years after its outbreak" (referring to the epidemic) "sexual intercourse does not appear to have been suspected as the mode of its propagation; the primary affections of the sexual organs were not noticed as constant symptoms."

Further, that "if this plague has been, strictly speaking, a venereal disease, the sexual organs ought to have shown the first symptoms of a recent infection, whereas, as Grenbeck justly observes, they only became affected incidentally, in consequence of the general spreading of the pustules over the surface of the body." Jahr writes as to its cause, "the external circumstances favorable to the production of a pathological event as great as it was incredible—such, for instance, as the meeting of large hosts from every country, encamped for a long time in a climate to which they were unused, and sustained by unwholesome and unwonted supplies of nourishment; considering, moreover, the atmospheric influences, the noxious emanations from thousands of cadavers, excess and licentiousness of every kind; and, finally, the wild passions let loose by the war, the non event of such a plague as the modern syphilis would have seemed a source of astonishment, rather than that its advent should excite our wonder." (*ibid*, p. 291.)

Glanders, where it attacks only a few persons at a time, generally kills its victims, so that it rarely has much of an opportunity to spread or to degenerate—which requires time—into a disease like the one which resulted from the epidemic.

(*To be continued*).

TRICHINÆ,

A LECTURE DELIVERED BEFORE THE STUDENTS OF THE AMERICAN VETERINARY COLLEGE.

By F. S. Billings, V. M.

(*Continued from page* 231.)

From the time of the above-mentioned case of Zeukers, numerous others have come to pass in different countries, and epidemics of the disease have caused a shudder of horror among reffecting men and women. Such epidemics have been reported at Corback, 1861; Plauen, 1861–2; Calbe, 1862; Hettstadt, 1862–3; Hanover, 1864; Dresden, 1864, and other places in Germany. The most remarkable outbreak, however, is that of Hedersleben, a place of some 2,000 inhabitants, of whom 337 were sick at one time, and 101 died of trichiniasis. Cobbold communicated to Heller that the first authentic case of the disease's introduction in man came to pass in England in 1871.

Several most interesting examples of the discovery of the parisites in the muscles of living persons have been recorded in the annals of medicine.

We have already alluded to the case of a woman suffering from cancer of the breast at Altona, trichinæ being found in portions of it, on its removal.

The case of a stout and apparently healthy man entering a hospital at Calcutta with a tumor on his neck, and the subsequent discovery of trichinæ in the tissues of the same, is reported in the *Boston Med. and Surg. Journal*, Vol. LXXII, p. 167.

Laugenbeck, of Berlin, also removed a tumor in which the parisites were discovered.

Forty persons became diseased at one time, at Bremen, from eating American pork.

*At Lissa, five members of one family became infected from eating of a ham which, it was said, *had been pickled, then smoked, and boiled for two hours.* †A poor woman became infected from the consumption of dog-meat, which her necessities had driven her to for nourishment. ‡At Lindau, a suburb of Hanover, four hundred persons were infected at one time, and twenty-one died from eating trichinous pork. §Dr. Kiefer, of Detroit, reports a fatal case of this disease, the patient dying at the end of the fourth week. He also refers to other cases reported by Drs. Kronpein, of New York State, and Duigler, of Ohio.

Dr. Herr, Dubuque, Iowa, reports fifteen cases, of which five died from eating raw smoked ham made into sausages.

Several cases are reported in the *American Journal of Medical Science*, as having taken place in Philadelphia. In January, 1881, a case occurred at Blackwells Island, N. Y., which caused considerable excitement. Two cases were reported in Chicago during the same month, and two at Milwaukee, Wis., in December, both of whom died. Dr. Germer, Health Officer, Erie, Pa., writes the Treasurer Board of Health, under date of January 27, 1881, that the preceding Christmas he discovered seven cases in a place eight miles distant, which were caused by eating the ham of a home-fed and cured hog.

The most interesting American case, to my mind, is one that occurred at Brooklyn, N. Y., in September, 1879. Seven of a family were affected and two died. This case came to trial at Brooklyn, the family sueing a packing house of which they had bought half a ham two days previous to the outbreak of their sickness. As they had been continually in the habit of eating raw ham and sausages, and as they had purchased the ham only two days previous to the first symptoms of the disease, it is self-evident the plaintiffs did not have any case, especially as no microscopic examination of the ham had taken place. Further, it does not seem how retailers of pork can be held responsible for its containing trichinæ in a country where neither the law or the community recognize the existence of any such disease of

* † ‡ § *Boston Med. and Surg. Journal*, Vol. XC, p. 491; Vol. XCI, p. 471; *ibid*, p. 627; Vol. LXXIV, p. 208.

such flesh. Even our Boards of Health simply recognize the existence of the parasites in pork as a scientific fact, but take no steps to prevent its sale. All the hogs examined by myself were cut up and sold, even though the Massachusetts Board knew that I was continually finding trichinæ among them. Until the public becomes alive to its own interests, we may be sure no steps toward prevention will be taken by the State. A German Judge, however, has ruled differently than was the case at Brooklyn.

*A provision dealer at Berlin was declared guilty by a Judge of a criminal court for selling trichinous pork, which had not been subjected to microscopic examination, but which had caused disease in a number of persons, some of whom died. The Judge ruled that such a decision was justifiable, even though the microscopic examination of pork was not then made imperative by law. The objection that the seller had no knowledge of its injurious character, was ruled out.

Dr. Sutton, of Aurora, Indiana, reports the following nine cases of trichiniasis, three of which ended fatally: All of the persons had eaten of uncooked smoked sausages, which were derived from a pig, the flesh of which had never been examined; the sausages were found full of trichinæ. All the sufferers showed the same symptoms of gastro-enteritis; muscular pains were, however, not present in all. In one of them, who died, the muscular pains were so severe, that he could not make the least movement; general œdema also complicated his case. An investigation of the muscles of this person revealed an immense number of trichinæ, so many, that it was calculated each cubic inch contained 100,000. In both the other cases, which enjoyed the same cause, and were accompanied by the same symptoms, no trichinæ were to be found in the muscles, post-mortem, only the indications of gastro-enteritis. One or two trichinæ only were found buried in the mucous coating of the intestines. In the first case, the general œdema and myalgia appeared ten days after the appearance of the gastric phenomena, and as eight days (or thereabouts), are necessary to the development of the embryo trichinæ, the emigration of the same over the organism must have taken place very rapidly.

*Apothekerzeitung, 1876, No. 20.

The resemblance of the symptoms in both the lethal and milder forms with those of simple inflammation of the intestines, is of great moment in considering the disease in man, and have also been produced experimentally in the dog. Many cases which have in America been looked upon as dysentery, may have been mistaken for trichiniasis.

This is rendered still more probable from the fact that from microscopic investigations of thousands of swine slaughtered in Indiana three to sixteen per cent. of the same were found having this disease.*

The Western States are mostly intended in pork raising, and some five million swine are yearly slaughtered there, the flesh being one of the chief supports of the people. If four per cent. of these animals are trichinous, that would be twenty thousand infected swine slaughtered yearly, and we can easily see how many hundred human beings could possibly become diseased and escape notice, as in ninety out of every one hundred cases the intestinal phenomena generally predominate (*Lancet*, Vol. II, 24, 1875).

"Our readers will be shocked to learn that another case of trichinosis has appeared in this vicinity, death resulting from the disease. The subject was a Mrs. Hamer, who was treated by Dr. Dunning of West Webster. The case appeared mysterious and baffled all treatment. A sister of Mrs. H. was also taken sick with symptoms of similar character. An investigation of portions of the muscles of the lady that died demonstrated the presence of immense numbers of trichinæ."—(Rochester, N.Y., *Democrat*, May 1, 1879.)

Cases have also been reported in the annals of the Michigan State Board of Health at Otsego, Detroit, Port Huron and other places, many of which ended fatally.

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* It would be very valuable to have some official record of these thousands of swine which have been examined. As none such exists, we must believe the same to be a loose assertion without foundation.

STATISTICAL REVISION OF THE TRICHIN EPIDEMICS IN SAXONY FROM 1860 TO 1875.*

Thirty-nine outbreaks of trichiniasis among men have taken place in the sixteen years in question. The whole number of persons which were reported to the officials was 1,267; of these nineteen died—1.58 per cent. In a proportionally small number of cases the infection took place from eating raw meat; in most cases, however, "knockwurst" and "bratwurst" were the causes. The sausages are made from raw chopped meat and smoked for one or two days, and eaten either cold or slightly fried. Of the nineteen persons that died three (of eight) were infected from raw meat; two (from 630 infected) from cold hashed sausage; eight (from 340 diseased) from "bradwurst" (fried sausage); and two (of forty-eight diseased) from ham; with reference to the other four there is no information. Of the 6,959,964 swine which were slaughtered in Saxony in these sixteen years only 39:1:180,000 gave occasion to trichiniasis in man."

It is much to be regretted that the statistics of our medical schools and hospitals do not give us the exact number of cases where trichinæ have been found at autopsies of human beings. Dr. Bowditch reported four such cases in the Boston *Medical and Surgical Journal* of 1842–44. Turner says of Scotland, that in five years, 1.2 per cent. of the human cadavers were found trichinous. Fiedler found in Dresden 2.4 per cent. to be in the same condition. Wagner in Leipsic reports one to every 30–40 cadavers as trichinous. Virchow reports them as quite frequently met with. Zeuker reports 1.79 per cent. of the autopsies seen by him at Dresden as trichinous. Reports of like nature, though not of so great a per cent., come from Italy, Russia, Sweden and other countries.

Austria lays claim to great immunity among her swine, which, it seems to me, must be sought in insufficient examination of slaughtered hogs.

†Prof. Franz Mueller, of the Royal Veterinary Institute at

* H. Reinard's Archiv d'Heilkunde, 18 Jahog., p. 241, 1877.

† Oesterrichische Vierteljahrsschrift fur Veterinairkunde, Vol. LI, No. 2, p. 176.

Vienna, says that for years neither in Vienna or in its vicinity has a single trichinous swine been found, notwithstanding investigation at the hands of experts, nor has a case of trichiniasis by man taken place.

PREVENTION OF THE DISEASE IN MAN.

All the regulations which we have previously detailed with reference to the prevention of the disease in the hog are equally applicable to its prevention in human beings. Aside from these there is much which man can do to prevent the disease, even though the pork eaten may contain the parasites in great numbers. *The only secure means of prevention is long and sufficient cooking. Heat thus applied is sure death to these parasites.* Lenckart's and other experiments have shown that a temperature of 140° F.—which must extend through a piece of pork—is necessary to securely render trichinæ inert. The direct application of dry heat to slides holding specimens of trichinous pork, by means of Schultz's heating table, has demonstrated, under the microscope, that a temperature of 50° C. or 122° F. is necessary to the certain death of the trichinæ. Leisering's experiments with trichinous pork made up into sausage meat and cooked twenty minutes, gave positive results in one rabbit fed upon it and negative in another. He sums up his experiments as follows:

1. Trichinæ are killed by long continued salting of infected meat and also by subjecting the same for twenty-four hours to the action of smoke in a heated chamber.

2. They are not killed by means of *cold* smoking for a period of three days, and it also appears that twenty minutes cooking of freshly prepared sausage meat is insufficient to kill them in all cases. The various kinds of cooking, however, are quite different in their effects on trichinous pork. Frying and broiling are most efficient, roasting coming next. Boiling coagulates the albumen on the outside and thus interferes with the penetration of the heat into the centre of the piece. No matter what method of cooking may be employed, all pork must be well cooked.

EDITORIAL.

UNITED STATES VETERINARY MEDICAL ASSOCIATION.

The twentieth annual meeting of the United States Veterinary Medical Association has just been held, and has proved one of the best which the Association has had for several years. Various important matters of business were transacted, several new members were elected, and quite interesting subjects were brought forward to fill up the time the members were together. We must, however, do, as we have already done in former occasions, complain of what we consider a great lack in the proceedings of the Association. We refer to the want of proper attendance to duties by some of the committees of that honorable body. It will be seen, for instance, that of all the committees appointed two very important remained silent when the time came for them to report. The Committee on Intelligence and Education had no report to make. The Committee on Prizes was absent, or, at least, represented by only one member, who had nothing to say. We regret much that the former committee had failed to find material to write upon, specially in the present condition of the profession and in the actual state of veterinary education; and certainly our disappointment must have been felt by other members, if we can judge by one of the many letters which we have received, where one gentleman wrote to us of an important interest to the veterinary profession, "Inquire into the great necessity of inquiring into the standing of the schools granting veterinary diplomas in America." That alone ought to have been sufficient for a good committee to work upon, and still that of the Association had nothing to report. And again, was not the subject of veterinary sanitary organization another interesting subject?

As to the Committee on Prizes, we were still more disappointed. When the appointment was made of the gentlemen who were to form the committee, we heard of a notice which was about to be sent, or was sent, to all the members of the Association, calling their attention to the prizes and urging them to work for them. What has been the result of that good move? Were

not the members notified? or did the members thus notified throw the notice aside and forget all about it?

This is a very bad state of affairs, and one which, if continued, might prove very detrimental to the usefulness and to the life of the Association.

Still, the meeting did some worthy act; it has appointed a committee and appropriated a certain amount of money to carry on experiments upon the value of inoculation againnt anthrax by the method of Pasteur. This is a move in the right direction, for while it is giving an opportunity to test the value of the prophylactic treatment of a series of fatal diseases of our domestic animals by one peculiar way, it is not, after all, only the Pasteur vaccination itself which will thus be tried, but vaccination itself. If successful in this mode, the Association should have them keep up their experiments and try the other processes, which, in the eyes of many European authorities, are of a more practicable application and just as successful.

INTERNATIONAL VETERINARY CONGRESS.

As our readers have been informed already in the REVIEW, the fourth International Veterinary Congress is to take place in 1883, at a date to be named on a later period, at Brussels. A number of circulars have already been sent all over the world and every effort taken to make it a great success.

The first congress, which was held some twenty years ago, was started by Prof. John Gamgee, and took place in Hamburg. In 1865 the second session of the congress took place in Vienna, and followed by a third meeting in September, 1867, at Zurich, which, after interesting labors, adjourned to 1870, when the meeting was to be called at Brussels. From unforseen events, however, the Committee on Organization failed to have the meeting at the time apppinted, but since then arrangements have been made to hold it next year. Amongst the interesting questions which are to be discussed there is one which we think will be studied by veterinarians all over the world, and perhaps more by those of America, where the profession is comparatively young,

and where the organization of veterinary education can be benefited by the lessons and experiences of the Old World.

This proposition rests on the *organization of schools, their connection with universities or other establishments of learning; preliminary instruction; development of the studies.*

The various articles which were proposed at the third International Congress read as follows:

1st. Preparatory studies to that of veterinary medicine must be as extended as those required for the study of human medicine. It is desirable that as early as possible veterinary students should be required to possess the same preparatory knowledge as for university studies. As, for numerous reasons, this could scarcely be enforced, however, the congress has decided that the minimum of preparatory to special veterinary studies must be equivalent to those obtained in a higher class but one of a school preparing for admission to a university. * * * * * *

2d. *Three years of special studies at least are necessary for veterinary medicine.*

The creation of veterinary surgeons of various classes, according to their various degrees of education, is opposed.

3d. Veterinary schools may be separated, autonomous establishments, or may be connected with universities, as other schools of superior instruction; BUT VETERINARY MEDICINE MUST BE TAUGHT IN SPECIAL CHAIRS. CONGRESS CANNOT BUT DISAPPROVE THE INSTITUTION OF A UNIVERSITY CHAIR WHERE ONE PROFESSOR ALONE HAS FOR DUTY TO FORM VETERINARY SURGEONS, AS THIS MODE OF INSTRUCTION IS ALTOGETHER INSUFFICIENT.

4th. This necessary organization of veterinary education must be adopted wherever the practice of veterinary medicine is properly established.

VETERINARY COLLEGES.

With the month of October returns the opening of medical schools and of veterinary colleges. But a few years ago, schools of that specialty of medicine were unknown, and if we can judge from the present condition, and from the reports which come to us, the prospects are that before long, veterinary education will

be as easily obtained as human medical instruction, veterinary colleges being as numerous. The question, however, is, whether this sudden growth of schools of that specialty of medicine is going to be of much advantage, either to the profession or to the public, and if, instead of several small schools, it would not be better to have one large institution, under city or State supervision, and if this governmental school is not possible, whether it would not be more in the interest of veterinary science, which is yet so young in America, to have all the separate schools unite together and form one large institution, with one object in view, namely, elevate the profession. We know that competition is the chief life to success, and that if schools have between them an honest rivalry and a desire for constant improvements, students will be benefited—the school in that case which would do the best would be best patronized—but is this always to be the case? Are not temptations to be so great that benefit to the profession will be but second or third rate considerations, especially when, as now, the number of veterinary students will scarcely be sufficient to supply, in a satisfactory manner, all those veterinary schools? We fear not?

The great difficulty in the permanent success of veterinary schools and long life has been that, up to recently, they were the result of mere personal efforts and private undertakings, and if what might be called a governmental school was started, these private institutions would be obliged to close their doors; in fact, it would be their duty to do it. New York State has been the only one where, so far, veterinary colleges had existence long enough to have them considered a success, and it is probable that their life will last for some time to come. But there are two other States in the neighborhood of that great one, viz.: Massachusetts and Pennsylvania, which also are going to work in the interest of veterinary medicine, and whose influence may be of some importance in the life of private schools. Harvard Medical College has already opened her course of veterinary lectures with Prof. C. P. Lyman in the special department of veterinary medicine. This is a great opportunity for the Professor. No one who ever attempted to teach veterinary science, with the ex-

ception of Prof. Law, ever had as handsome an opportunity to make the attempt a great and permanent success. Assisted, as he will be, by the name of the institution with which he is connected, by her reputation, her high standing faculty, her financial support, what more can one desire, epecially when, with all this, he has also with him the best wishes of the profession.

Pennsylvania is also preparing for the same work. The intention, announced some time ago, that the Pennsylvania University was going to start a veterinary school, has already received a certain amount of execution. Funds have been contributed, grounds for buildings have been provided, her future teachers have gone to Europe and have prepared themselves for the work. The University has been slower in coming into active life than Harvard and the other schools, but she has done it carefully, and though it may be yet two or three years before a regular veterinary course will be established, we are much inclined to look upon the veterinary school of the Pennsylvania University as the veterinary school of the future. Philadelphia will then redeem the bad name and reputation that the McClure put on her at the time of the famous veterinary diplomas mill.

A JUST DECISION.

We print in this issue the decision rendered by the Hon. Judge of one of the District Courts of New York City, in a case where a veterinarian met with an accidental fracture of a dorsal vertebræ, while operating upon a horse for catilaginous quittor. The case was very plain, and no anxiety could be felt in the matter on the part of the veterinarian. Still it is a good precedent worthy of registration, especially in this country, where a man is so likely to take similar steps as the plaintiff in this action, urged by errors or wrong advisors, where the life and value of a horse is at stake.

TEXAS FEVER A MATTER OF NATIONAL IMPORTANCE.

By D. E. Salmon, D.V.M.

(From the Breeders' Gazette.)

There is no infectious disease with which we should be better acquainted than with the so-called Texas or Spanish fever of cattle. Its ravages have been known, and its peculiarities have been a subject of comment in the Northern States for the past ninety years; while it had existed in certain parts of the South for we know not how many centuries earlier. All the cattle taken to the infected districts of our Southern States to improve the native herds, or to introduce new breeds, have been subject to this affection from time immemorial, and the few which have survived became innured to it, just as a certain proportion of the foreign population of Havana becomes innured to the yellow fever. With both of these diseases the immunity acquired in this way has been erroneously ascribed to acclimatization, while in reality it consists either in a natural insusceptibility to these affections, which a few individuals possess, or it is the result of a mild attack, which, with these, as with other infectious maladies, protects against the peculiar virus in the future.

Even the beef cattle shipped from Tennessee and the mountains of the Carolinas, Georgia and Alabama, to certain market cities of the South, contract the plague in so short a time that it is nearly impossible, though it be winter, to get them slaughtered before the first symptoms appear; while the number of times cattle from the South have infected the pastures of more northern latitudes, and destroyed the native stock upon them, has certainly been sufficient to demonstrate, to well-informed men, the dangerous qualities of such animals.

I state these facts, which are a matter of history, and of every-day observation in certain parts of our country, to recall the infinite importance of the subject and the necessity of our stock raisers having correct information, and of keeping it before them, in order that at least a part of the enormous losses may be arrested, which are now of annual occurrence. From time to

time in the past, I have endeavored to call attention to our true condition in regard to this disease, but the light-headed correspondents, not only of our agricultural journals but of our great dailies, have been so industrious in the dissemination of their peculiar opinions—opinions arrived at by a sort of intuition, and at hundreds of miles from a case of the disease—that many have become skeptical in regard to the way in which the affection is transmitted, or even as to its existence. But the stock raiser in Missouri, Kansas or Indian Territory, who repeatedly and clearly traces his losses to crossing the trail of a Texas herd, or to the pastures which such a herd has infected, has no such skepticism; nor had the farmers of the great States of Illinois, Indiana, Ohio and Kentucky, when, in 1867 and 1868, they saw not merely thousands, but tens of thousands of their native cattle swept away by this pestilence.

The excitement which followed this destruction has long been forgotten, however, and the majority of our farmers have never even heard of Texas fever, and so every year certain individuals of a speculative turn of mind invest in the cheap cattle of the South, and graze them immediately upon pastures which are also occupied with their native animals. When the heat of July and August has enabled the germs deposited upon the soil to multiply sufficiently, the susceptible native cattle are infected and die, and we are then told of a new and strange disease of the most remarkable virulence. This is the substantial history of hundreds of cases which have occurred, and are continually occurring in North Carolina, Virginia, Vest Virginia and other States, and which have furnished the text for the many absurdities lately written, not only by the penny-a-liners, but, I am sorry to say, by those as well who claim to be veterinarians.

How important it is, then, that our farmers should accept the fact, that in a vast section of our country—a section more than six times the size of England and Scotland combined, and two and a half times the size of France—we have a terribly fatal indigenous cattle plague, permanently located; and that all cattle taken to this district are liable to be infected, while those taken from it, though apparently unaffected themselves, are capable of

carrying the germs to infect the pastures and roads on which they travel. This fact, so patent to every observing man, demonstrated over and over again so many times, and now supported by hundreds and thousands of facts, is nevertheless contested by a majority of farmers, and even in districts where losses are annually occurring, there is far from a unanimity of opinion. The losses are ascribed to ticks, to mushrooms, to peculiar characters of the vegetation, to acid in the soil, to something in the air, and, in fact, to anything and everything but the real cause, which there seems to be an extraordinary determination to overlook.

In the Northern and Western States it is not a difficult matter, as a rule, to trace the outbreaks of this disease to the introduction of Southern cattle; but along the border line of the infected district, where cattle are being continually driven, and where most of the roads and commons are infected, it is next to impossible to discover exactly how very many of the cases have originated. And it is just here, where it is doubly important for the people to have clear ideas of its origin and nature, that they utterly refuse in many cases to be convinced—that they will not take the necessary precautions to avoid it, and, as a result, suffer most disastrously.

If the losses from this stupidity were confined to those who ignore so plain a fact, we might be satisfied to allow the matter to rest; but, as I demonstrated in my report to the Department of Agriculture on this disease, the permanently infected district is being continually enlarged in this way—the border line is advancing farther and farther, and it seems to be only a question of time when our whole country will be infected. I say only a question of time, but it may be possible that our stock owners can yet be roused to an appreciation of the dangers which threaten them, and that they will impress upon their representatives in Congress the necessity of national legislation for controlling such destructive pests. At present we seem to be in the remarkably absurd predicament that the States can make no effective laws, because this would be infringing upon the prerogative of the Federal Government, and Congress will do nothing, for fear of violating the rights of the States; so that, between the two, we are about as helpless as it is possible for a people to be.

It may be that in this respect I am assuming somewhat the character of an alarmist, but there are certain cases in which it is justifiable to sound an alarm. If the colonists of Australia and South Africa had realized what was in store for them by the introduction of pleuro-pneumonia, would not they gladly have slaughtered the infected animals as soon as discovered and placed sentries around every infected piece of ground? But they did not realize their danger, and the result was most disastrous to their leading industry; nor do we to-day, as a people, realize the losses that are continually occurring, and the much greater losses that must of necessity follow in the future from pleuro-pneumonia and Texas fever if they are not checked. Any one who underderstands the nature of pleuro-pneumonia could have predicted with absolute certainty the result of infecting the ranges of Australia and South Africa with the germs of this disease; and so the result of infecting our pastures with either lung plague or Texas fever may be predicted at this time with the greatest confidence. It is not a question as to whether our people should be aroused and alarmed, but simply as to how this can be done in time to prevent the misfortune that is impending.

We have remained tranquil in the belief that the Texas fever infection was only permanent in the malarial districts of our south Atlantic and gulf coasts, and that it could under no circumstances resist a heavy frost. But this is a deplorable mistake. Texas fever and malaria have nothing in common---the infection has extended and is now permanent in lands perfectly free from malaria; and not only does it resist a heavy frost, but it is not even exterminated by winters when the temperature sinks to zero, or even below.

I have written this to call attention to the importance of this disease; and when I have added that as the plague advances over a new district it not only destroys the greater part of the native cattle, but it makes the raising of these animals practically impossible for ten or twenty years, and that forever afterwards the introduction of improved stock is attended with the most disheartening losses, the reader cannot fail to see that this importance is not exaggerated.

REPORTS OF CASES.

(Sent to the Meeting of the U. S. Veterinary Medical Association.)

RECURRENT FIBROMA.

By G. C. Faville, B.S., D.V.M.

On May 15th last, a large four year old mule was sent me, with the injunction to "kill or cure."

The animal presented a most disgusting appearance. On its head, beginning at the base of the right ear, and running in a direction down and back, following the angle of the jaw, were two very large "bunches," as large in themselves as the balance of the head. The skin was drawn tightly over them, and in places was broken, giving them a sloughing, bloody look. On the neck were several bunches, varying in size from a peck measure to a walnut.

About a year before the animal had a small nodular swelling in the submaxillary space, and the owner thought he had been hurt in some way. The bunch kept enlarging, and finally had been removed, but soon came back, and others also appeared in several places on the head and neck. I pronounced them "recurrent fibroma," with an unfavorable prognosis. At the owner's desire, I anæsthized the animal. Cutting into the bunch nearest the ear, I removed with very little cutting, forty-four (44) fibrous tumors, ranging in size from a "double fist" to a pigeon egg. Hemorrhage was very great, despite my utmost efforts. Dressed with absorbent cotton, and saturated with liquid ferri sub-sulph.

May 17th. Removed a nest of forty (40) tumors from submaxillary space.

May 23rd. Removed, with an ecraseur, a cyst from the neck, containing twenty (20) tumors, and from individual cysts, some six or eight more, making in all more than 110 tumors that were removed.

In order to obtain a complete slough of whatever portion of the cysts that remained, I used a dressing of pure carbolic acid, covering the wounds with marine lint, saturated with the acid. I

sent the animal home, a distance of eighteen miles, on May 25th, and to-day he is at work.

Microscopic examinations showed the tumors to be "spinale celled sarcoma."

TORSION OF THE UTERUS IN A MARE.

By the Same.

June 3d, I was called to see a large brown mare which had been in labor for about twelve hours, with no appearance of the foal. The hostler had examined her and said he could find no opening to the uterus at all. Examination showed a complete right torsion. The throes of the animal were terrific, and before anything could be done to check them, during one of her excessive struggles, the vagina was broken through on the left side, and several yards of intestine were forced through the opening and out at the vulva, and the animal rapidly sank and died from internal hemorrhage. Post mortem showed the condition I have described. The uterus contained a large fœtus, and there was complete torsion. I could trace no cause for the trouble. The mare was nine or ten years old, and had raised several colts.

MONSTROUS CALF.

By the Same.

June 16th. Called to see a cow that had been in labor about twenty-four hours. The water bags were ruptured, and the four feet and the head of a fœtus were presented. Examination showed that there was something abnormal, and gentle traction that the fœtus would come as it was. It could not be moved back at all, so I pulled it away with force. Imagine a section to be removed from the body, extending from the first ribs to the sacrum, and the remaining parts to be placed backs together and united. Or the sacrum to be united with the seventh cervical and then turned completely back. Head, neck, and limbs were perfect. The intestines were all present but floating around loose,

attached to the body only by a small pedicle at the junction of the four limbs. There were no abdominal or thoracic walls, but all the viscera were present floating in the fœtal membranes. Another fœtus was present, normal but dead.

NEW REMEDY.

By W. Cutting, V.S.

I have began the use of a (to me) new remedial agent, the "ol Ucalyptol folis." The first case I used it on was a case of fœtid nasal gleet. On the 20th of March, 1882, I trephined the frontal sinus on the near side of the head of an oldish gelding, in good, fair condition. Although kept in a shed outside of a brick barn, containing twelve or fifteen horses, he made the whole premises stink. The discharge was constant from the near nostril; the submaxillary gland was swollen and hard on the near side. I made an opening five-sixteenths of an inch in diameter into the sinus, syringed it out with warm water, and then rinsed the cavity out with a weak solution of chloride of lime. The next day I dressed it with the ucalyptol, injecting a small quantity into the cavity. The fetor ceased immediately. I continued the dressing once a day, rinsing out first with warm water and then injecting the ucalyptol. On the 16th of April I dressed him the last time, and reported him cured. I saw him a day or two since. The cure is permanent, and the lump under the jaw has disappeared.

CARTILAGINOUS QUITTOR.

By the Same.

I have now a case of quittor that I am dressing with the ol ucalyptol. The owner ordered me not to cut the foot on any account. The animal, some six months ago, picked up a nail, wounding, I think, the inner alæ of the os pedis of the near hind foot. The foot was poulticed by the groom thoroughly. Some time ago I examined the foot, and although there was a small

sore on the inside heel, I could find no sinus. I ordered it dressed with digestive ointment, but at last it fully developed into a quittor. I passed a probe into the sinns an inch and a half, to the bone. So I rolled a little bi chloride of mercury in paper and passed it to the end of the sinus. The core formed, and in due time I took it out, since which I have dressed the cavity with the ucalyptol. The wound looks favorable for recovery. On dressing, I saturate a piece of cotton batting with the ucalyptol, pass it to the bottom of the wound after washing it clean, covering with dry batting, and keeping it in place with a finger bandage. I have an idea that the use of this agent will prove a step in advance in the treatment of such cases as nasal gleet, quittor, fistulous withers, and poll evil.

STRANGULATED SCROTAL HERNIA—DEATH.

By C. H. Peabody, D.V.S.

About 9:30 P. M. on the evening of June 23d I was requested to visit a stallion that had been suffering from colic since the evening before. On inquiring I found that my friend, Dr. Scrutton, had been attending, and I refused to go without Mr. Scrutton accompanying me, which he did.

On the way to the track where the animal was, I obtained from Mr. Scrutton the following history: He had known the animal since he was foaled, six years. Had at four months old reduced a small scrotal hernia. Again, at eighteen months, advised castration, but owners would not consent. Again, at about three years old the same trouble; recommended castration, but was not allowed to do it. The animal has suffered from the same thing several times since, getting over it himself sometimes, then again having to be helped. Has been wearing a leather truss for a long time until last night, June 22d, Dr. Scrutton was called, and, with the assistance of some stablemen, reduced the hernia. Advised castration, and went prepared to do it this morning (June 23d), but was not allowed to do so, the animal being quiet from the opiates he had given in the form of opium and chloral.

He remained quite easy until about 4:30 P. M., when he began to be restless; remained so until 6:30. Dr. Scrutton and I arrived at the track abont 10:30 P. M. There was a black stallion six years old, 15 hands, 3 inches high. The pulse was imperceptible; respiration labored; temperature 103, extremities cold; body covered with a cold perspiration; some tympanitis; trembling of posterior extremities and flanks. On examining the scrotum found an enlargement of the nigh side (the whole scrotum being nearly as large as a boy's head). By bringing pressure on the nigh side with one's hand, could both feel and hear a swashy movement. After a careful examination per rectum, etc., we gave a prognosis of unfavorable result; decided not to operate, as the owner then wanted us to do. *Treatment.*—Hypodermic injections of morphia. The animal died about 1 A. M. June 24. We made an autopsy sixteen hours after death, and on the nigh side found in the scrotum from the entrance through the ring to the loop, fourteen inches (making in a straight measurement twenty-eight inches) of intestines, which were of a dark purple color, and very much thickened, and containing eight ounces of dark bloody colored fluid. Dr. Scrutton kindly gave me the specimen, which I have preserved. I have since been informed by Dr. Scrutton that the horse's grandfather, Narragansett (at the time owned by A. & W. Sprague), died from the same cause.

A PIECE OF WIRE IN A COW'S HEART.

BY THE SAME.

At about 3 P. M. on April 20th I was called to see a cow. On the way to the farm I got the following history: The cow had been well until about a fortnight before, when it was noticed that she was a little dull; that once in a while she coughed, and she began to fail in her milk, but for the last week she had lost flesh very fast, had stopped giving milk altogether, breathed very hard and fast. Felt hot at times, then would be cold and shake. For the last two days would neither eat or drink, but stood with

its head down; that something looking like pus ran from her mouth. About twelve o'clock that day, when we arrived at the farm, we found the animal dead.

Post mortem was made at once. I found all the abdominal organs but the liver healthy. In the liver there was quite a large abscess that contained about four ounces of pus of a very fœtid odor.

On opening the thorocic cavity I found the right lung congested and two abscesses in it, holding about eight ounces of pus; the heart was enlarged to a considerable extent. I found a round cord-like growth coming along the tract of the posterior aorta. On cutting into it I found it contained pus. On removing the heart I found a piece of wire, such as is used on hay, three and a half inches long, had worked itself through the right auricle of the heart and pinning, as it were, the auriculo-ventricular valve in its course downward so it could not work. As it was nearly dark and the post mortem was made in the woods and in a hurry, it was not as thorough as I would like to have had it.

FRACTURE OF THE OS SUFFRAGINIS.

By the Same.

April 15, 1878, called to see a gelding which had slipped from the curbing of the sidewalk to the pavement and fell on its off side. In getting up it struggled considerably, and when it got on its feet was unable to put its off fore foot to the ground. This is the history I got on my way to the stable.

On arriving there I found the animal standing on three legs, the fourth one swinging every time the animal moved.

Diagnosed the case. Compound fracture of the os suffraginis, and advised the animal to be destroyed, which was done.

Post mortem of the leg found the first and second pastern bones involved in the fracture, the first pastern bone broken into twenty-eight pieces. The os corona had the internal angle of the superior articular surface broken off.

REPORT OF THE COMMITTEE ON DISEASES.

By Prof. A. Liautard, Chairman.

Mr. President and Gentlemen:

When I accepted the compliment paid to me by our worthy President to serve as chairman of the Committee on Diseases it was my hopes to be able to gather sufficient material and data to make a report which would have proved interesting to the public at large as well as instructive to the profession. Being unexpectedly called to Europe this summer, after a short stay I returned to my duties, and found the time so short that I was almost tempted to give up the work and follow the example of our friendly predecessors and only report "progress," but at the same time thought that in so doing I would do injustice to our friends and to the Association. It was then that I decided to try and obtain the information that I beg here to present you, asking your indulgence for whatever disappointment this report may bring you.

I supposed that the objects of such a report was to give the collective information of what form of diseases had prevailed through the country, and to obtain whatever light could be gathered relating to the entire history of these diseases. To that end I distributed one hundred copies of the little circular which you have all received and in which the six following questions were put, viz:

1st.—What diseases have been most prevalent in your State or cities for the last twelve months?

2d.—Have you had any epizootic outbreak? If so, of what disease?

3d.—Give a short account of supposed causes, peculiar symptoms, lesions, treatment and result. If possible, average mortality.

4th.—Have you seen any cases of contagious diseases? If any peculiar case, give short account.

5th.—Have you had or heard of any specially interesting cases of pathology, surgery or obstetrics? If so, give a brief account.

6th.—Give any material that you may think of interest to veterinarians, in any of their specialties.

I need not tell you how fully I appreciated the imperfection of this circular; but I felt that if it was well received by those to whom it was sent and if it was answered, I could have a fair amount of documents to work upon.

Those one hundred circulars were sent to members of the profession in the United States and thus spread into twenty-nine States of the Union. I am pleased to inform you that I can present you with a general sanitary condition of fifteen States whose practitioners have done me the honor of an answer. Unfortunately, amongst the fourteen upon which I cannot report are some whose condition would have been most interesting to us at this time, when sanitary medicine is receiving such recognition by the General Government. Indeed, it would have been important to us to know how New Jersey and Maryland were doing with their pleuro-pneumonia, how Nebraska, Colorado and Texas were doing with anthrax, Texas fever, while information from Michigan, Iowa, Minnesota, Indiana and Maine would have proved most interesting. Those States are too wealthy in domestic animals to avoid interest in their welfare. The various letters which I have received have allowed me to ascertain the fact that some diseases have been prevailing, more or less, in various States, and that in some these affections, whether contagious or not, have been so extended that they could almost be considered as regular epizoötics. The answers were from the following gentlemen: J. H. Stickney, O. H. Flagg, J. F. Winchester, W. Bryden, E. F. Thayer, *for Massachusetts;* B. McInnes, *for South Carolina;* P. Z. Colsson, *for Alabama;* J. D. Hopkins, *for Wyoming Territory;* M. R. Trumbower, C. Crowley, S. V. Ramsay, J. B. Galt, *for Illinois;* W. Manz, J. C. McKenzie, C. Burden, G. Kidney, W. Cutting, *for New York;* W. Derr, N. S. Townshend, *for Ohio;* O. L. Hendershott, *for Kansas;* J. Rice, *for Connecticut;* W. Zuill, N. E. Rheinhart, J. C. Michener, *for Pennsylvania;* C. H. Peabody, *for Rhode Island;* G. Agersborg, *for Dakota;* L. H. Tourtellotte, E. R. Evans, *for Wisconsin;* W. E. B. Miller, *for New Jersey;* G. C. Faville, *for Kentucky;* R. McLean, as we came to the meeting.

Influenza.—The most prevailing disease of all, and one that I found named in thirteen answers of those received, is that which under the same symptoms and same history I find receiving the various names of pink-eye, influenza, epizootic cellulitis, pink-eye fever, epizootic influenza, and which, by all reports, has prevailed in Massachusetts, New York, Illinois, Kentucky, Kansas, Wisconsin, Dakota Territory, South Carolina, Missouri, Alabama, Pennsylvania, Rhode Island, Ohio and Connecticut.

The interesting point relating to that disease is the fact, which seems to be arrived at from observation, its importation from Canada. Mr. W. Cutting, of Rochester, in his letter says that "a form of influenza has prevailed in Rochester and vicinity, epidemic in character, and which, from investigation, I think was existing in Canada shortly before it was observed here, as many of the horses brought to Rochester for use and for sale by dealers were suffering from the disease when brought here," and the infectious character of the disease being noted by Dr. Michener, of Colmar, Pa., who says "that the only feature of the disease deserving notice is its spread by infection. I have taken much pains to learn the history of all cases, and Philadelphia has been the centre of inspection. For the surrounding country all of the horses in our section escaped, except those going to market, those stalled with them and drove-horses. Very few, put in infected stables, escaped."

In most States that disease has assumed the same character of more or less catarrhal troubles, with dropsical condition of the extremities, though in some part of Illinois, according to Mr. Trumbower, the abdominal form has been most extensively prevalent. According to Dr. Stickney, the spring of this year was the time when it was most prevalent in Boston.

There are also, in connection with this outbreak, two very interesting facts to observe: one is the appearance of glanders and farcy, which by some seem to be considered as a sequelæ of influenza; and the other is the large number of abortions which followed in pregnant mares. Dr. Crowly, of St. Louis, says in his letter "Abortions were numerous in breeding districts; some say that from one-half to two-thirds of the pregnant mares aborted;'

and Dr. Trumbower seems to confirm this by the following quotation: "In a number of the attacks, perhaps about two-thirds, of the total number of mares with foal affected by this disease, it affected the mucous lining of the uterus, causing abortion, the animal then usually making a rapid recovery."

Glanders and Farcy.—This disease or these forms of disease are next most frequently mentioned in the reports. Massachusetts, New York, Pennsylvania, Rhode Island, Illinois, Missouri, and even away west to Wyoming Territory, Kansas down to Alabama. As I have already said, it is considered by some as the consequence of the attack of influenza. Dr. Michener, of Pennsylvania, reports one case where, after eight months of treatment by various practitioners, he had at last the satisfaction to have the horse destroyed.

Anthrax.—The various forms of anthrax seem to be the next one on the list. Indeed, we have received information that many cases of anthrax proper have been observed in Dakota Territory, Wyoming Territory, Illinois, Connecticut and Missouri, while from Kansas and Wyoming Territory, the news has reached us of the presence of black leg.

In speaking of anthrax proper, Dr. Agersborg says, "The causes of anthrax seems to be only by infection, although in some cases it has been impossible to ascertain even this. The apoplectic form is the most common here amongst cattle, horses and swine.

Dr. Trumbower says that it has been more frequent and severe since the floods and high water of the spring of 1881 than previous to that time, and Dr. Hopkins writes "that anthrax is wide spread over this territory; that sphenix apoplexy and black leg are the most common forms, mostly in young animals, and due to the luxuriant feed, lack of exercise and also to *the fact as to animals dying of this disease, that their putrefying carcasses are left on the plains and in the water courses.* This," continues Dr. Hopkins, "is one of the causes of the spread of the disease, and I have made a strong appeal for the burying or burning of the carcasses."

The treatment followed is peculiar in Wyoming Territory,

and consists in changing the range of the animal, driving him ten miles a day, allowing eight hours of pasture, and driving them into a dry corral sixteen hours a day.

"The mortality among cattle and sheep from this disease is immense, but," says Dr. H., "I have no means to ascertain the number."

Those statements, gentlemen, are important, and I hope will be remembered by you at a later period of this meeting.

Texas Fever.—Under the same heading we would almost put Texas fever, which we consider as one of the forms of anthrax disease, and which, according to reports, we find has been prevailing more or less in New York, in Wyoming Territory, Illinois and Pennsylvania and New Jersey. You must remember, Mr. President, that in making this report, I am speaking only of the States from which I have heard. We all know that Texas fever has been prevailing in other States than those I have just named.

Hog Cholera and Chicken Cholera.—It is found that these diseases have been prevailing not only in their home-breeding States, such as Ohio and Illinois, but also in Wisconsin, Massachusetts, Pennsylvania and New York.

Cerebro-Spinal Meningitis.—This disease enters for a great share in the various reports which I have received—Connecticut, Illinois, Pennsylvania, Massachusetts complaining of its presence to quite a large extent.

This is a very important affection, which is so commonly fatal, and upon which so many opinions prevailed, that I must mention to you a new theory which was sent me by Dr. Michener, of Colmar, Pennsylvania. The gentleman sends me a long article upon that affection, which in his vicinity is called choking distemper, and which he says is sometimes miscalled cerebro-spinal meningitis—attributing the disease to the presence of a fungus floating in the air or adhering to the feed, and which is principally found in brewers' grains in a sour condition. Leaving aside the name of *fungosus toxicum paralyticus*, which the Doctor proposed, we think the subject worth investigating. I would recommend it to some of our pathologists. The important fact of the

appearance of this disease has been its severity, it having carried off many of the patients of all the gentlemen who have written to me about it.

Parturient Apoplexy has been prevailing in Illinois, Kentucky Wisconsin and New York.

Tuberculous Diseases.—Dr. Winchester, of Massachusetts, mentions that disease as prevailing more or less in Massachusetts, and Dr. G. Kidney, New York, reports also four cases in old cows. We much regret the silence which exists in connection with this disease, which all of us know can be met daily in our dairies, and cannot feel but greatly disappointed to have so little to report about *Pleuro-Pneumonia*, a disease which to us American veterinarians ought to be so interesting, because of the important part it has acted in calling the attention of Americans to veterinary medicine, and still upon which I have nothing to report. I cannot officially, from professional authority, say to you, it is here and not there, with the exception of Pennsylvania, Dr. Michener being the only one who says: "The efforts of our Commonwealth, through the Governor's special agent, to suppress pleuro-pneumonia, has seemingly worked well. We are now free from the disease, as far as known."

Strangles—Have been reported as quite extensive in Kentucky and Wisconsin. Knowing the character of the disease, it is not surprising that such should be the case in these breeding States.

Tetanus.—Connecticut, Alabama and South Carolina seem to furnish us a large proportion of this affection. Dr. McInnis reports to us fourteen cases of that disease, twelve traumatic, two idiopathic, of which one was in a cow. Of these, five recovered, nine died, also the cow. Tetanus occurred as late as sixteen days after punctured wounds of the foot, while some died in fifty hours after tetanus appeared. Some lived twenty days.

Periodic Ophthalmia is reported as very prevalent in Illinois

Foot Rot in Sheep in Wisconsin.

Scab in Sheep in Wyoming Territory by Dr. Hopkins.

Lung Worm has been been quite prevalent in Ohio; several

attacks of *azoturia* in Rhode Island; *diarrhœa* amongst new born in Dakota; a few cases of *purpura hemorrhagica* in Alabama, and quite a number of *laminitis* in New York, are reported by Drs. Townshend, of Columbus, Ohio; Peabody, of Providence; Agersborg, of Vermillion; Colsson, of Mobile; Manz, of New York.

A letter received this A. M. from Dr. Thayer, informs me that glanders was not as extensively common as in 1881, and that a peculiar cattle disease, whose nature was not positively known to him, had been reported in the town of Holliston.

This, gentlemen, forms about the entire resumé of the answers which I have received, and to which I am afraid I have, through lack of time, been unable to do justice. In concluding, and while here, I take opportunity to address my sincere thanks to all those who have seen fit to communicate with me. I beg also to report that I have at your disposal a number of very instructive papers which can be read now or will be, later on, published in the REVIEW.

The following papers are those furnished:

1st.—A case of tumor of the guttural pouches, and one of cerebro-spinal meningitis, by W. Bryden, of Boston.

2d.—A case of ventrial hernia, by Dr. W. Derr, of Worcester, Ohio.

3d.—Case of distaikia, by J. B. Galt, Illinois.

4th.—A very interesting case of recurrent fibroma, and one of monstrous fœtus, by Dr. Faville, of Kentucky.

5.—A case of a stick in the axilla of a horse, of several months standing, by Dr. Tourtellotte, of Wisconsin.

6th.—A case of influenza with pneumonia, an article on a new remedy, and a case of cartilaginous quittor, by W. Cutting, of New York.

7th.—Cases of cæsarean operations, one of dislocation of the os calcis, one of poisoning in a cow, from eating euphorbia marginata, by Dr. Agersborg, of Dakota Territory.

8th.—A long article on the regulation of veterinary practice in New York State, by G. H. Kidney, of New York.

9th.—A case of bronchitis by filaria, by Dr. Winchester, of Massachusetts.

10th.—Cerebro-spinal meningitis or choking distemper, or fungus toxicum paralyticus, by Dr. Michener, of Pennsylvania.

11th—Case of hernia, one of a piece of wire in the heart of a cow, by C. H. Peabody, of Rhode Island.

12th.—A case of ostea porosis, by W. Rheinhard, of Pennsylvania.

13th.—An interesting fatal case of colics, by Dr. Zuill, of Pennsylvania.

14th.—Observations of muco-enterites, by J. Rice, of Connecticut.

15th.—A case of rabies in a mule, by C. Crowley, Missouri.

SOCIETY MEETINGS.

UNITED STATES VETERINARY MEDICAL ASSOCIATION.

The twentieth annual meeting of this Association was held at the American Veterinary College, Tuesday, Sept. 19th. The Comitia Minora met at 10:45 A.M., with the President, Dr. W. Bryden, in the chair.

Some of the Board of Censors being absent, Dr. Stickney was selected to act in that capacity. Dr. Stickney declining to serve, Dr. W. J. Coates was chosen in his stead. The Comitia Minora were engaged chiefly in the consideration of proposed alterations of the By-Laws, and in reference to candidates for admission to membership. Because of the absence of some of the candidates, as well also as of those proposing them, several gentlemen will be admitted to the Association at the March meeting in Boston. The Secretary was directed to notify all candidates to be present in person at future meetings of the Comitia Minora, or, if unavoidably absent, to forward to the Secretary their credentials.

The regular meeting was called to order by the President at 1:30 P.M. About twenty-five members were present. The minutes of previous meetings were read and accepted. After considerable discussion, it was finally decided, upon motion of Dr. L. McLean, that, in consideration of the reduced fees, Sections 2

and 3 of Article VIII of the By-Laws remain as they are, the Secretary to use his discretion in the matter, and that when any action is taken, it must be before the general meeting.

The following gentlemen were then admitted to membership: Drs. Fred. Saunders, Chas. Moulton, Frank Traver, Samuel Kemp, L. H. Howard, H. W. Atwood, W. S. Devoe, Wm. Dougherty, John A. Leighton and W. A. Sherman.

Dr. J. Gerth, jr., proposed Andrew Sherk, V.S., for membership, and Dr. Coates proposed A. F. Martin, D.V.S., and L. M. Crane, D.V.S.

There were no reports by the Library or Education and Intelligence Committees. The members of the Finance Committee being absent, the President appointed Drs. Winchester and Field to audit the Treasurer's report. The Treasurer was directed to place the surplus funds of the Association in a savings bank.

Dr. Liautard then favored the society with a paper made up from answers to a printed circular sent among the different veterinarians. In this was found chief mention of influenza, cerebro-spinal meningitis, anthrax in its different forms, etc.

Drs. Stickney, Lockhart and Foote were appointed to nominate officers for the ensuing year. They reported as follows: President—Dr. Williamson Bryden, Vice President—Dr. L. McLean, Treasurer—Dr. Charles Burden, Secretary—Dr. C. B. Michner, Censors—Drs. Stickney, Miller, Lyman, Coates, Lockhart, Foote. The gentlemen nominated were elected for the present year.

The subject of printing copies of the Constitution and By-Laws was laid on the table, to be acted on at the March meeting.

Dr. Liautard then introduced the subject of inoculation for anthrax. He also presented to the society the different instruments chiefly used in inoculating cattle and sheep. Anthrax blood and virus were shown in hermetically sealed tubes. Prof. L. suggested the appropriation of society funds for experimental purposes. It was afterwards resolved that a committee of three be appointed to make experiments on the value of inoculation by the method of Pasteur, and $150. was appropriated for the purchase of some sheep and cows for this purpose. Dr. Liautard

was appointed chairman of the committee, with power to select the other two members.

There were no regular papers presented. Dr. Stickney reported a most interesting case of osteo-malacia, occurring in an old pony. Almost all the bones were affected, it being possible to cut them with a knife. Some of the muscles had undergone fatty degeneration, and were loosened from their attachments, with small plates of bone adhering.

Dr. Miller, of Camden, reported a very similar case in a fifteen months old colt, the property of Dr. Agnew, of Philadelphia. In this case, the limbs became enlarged and painful one after the other, and finally the head presented swellings. Before the death of the colt, and while down and unable to get up, Dr. Miller asserts that the limbs could be tied in knots, as one would a string. All the bones were soft and pliable. Dr. Miller hazarded the opinion that syphilis existed in the system of this colt, and that it was contracted from a groom. The dam of the colt, while being suckled, was suffering from a fracture of the femur, being in slings for about three months.

Other reports of cases were denied the Association owing to the lateness of the hour. The society adjourned to a banquet at Delmonico's, where the evening was passed in the most social and pleasant manner. The next meeting will be at Young's Hotel, Boston, the third Tuesday in March.

C. B. Michener, *Secretary.*

NEW YORK STATE VETERINARY SOCIETY.

The regular monthly meeting of the New York State Veterinary Society was held at the American Veterinary College on Tuesday evening, Sept. 12th, with the president, Dr. Liautard, in the chair.

After calling the roll and reading the minutes of the previous meeting, the secretary read a communication from Dr. Bunker, of Newton, Mass., reporting a case of strangulated hernia in a cow, as follows:

"About a week ago Dr. Thayer was called to see a cow which

was out of condition, and to which the man in charge of the herd had given a strong dose of cathartic medicine (epsom salts), which did not relieve her. He found the animal in a dull, listless condition, reluctant to move, moaning more or less—much more, it was said, when she laid down. She had diarrhœa, and the last of her discharges had been accompanied with some blood. She was feverish, but as her anus was relaxed her temperature was not taken. On rectal examination, the fœcal matter was found to be very black and very offensive. On the floor of the abdomen, a little in front and to the left of the udder, was a circular swelling, well defined, and quite hard on palpation.

"There was no history that the animal had received an injury from any cause. A diagnosis of hernia was made, with strangulation of the intestine. No opening could be detected through the floor of the abdomen, but the doctor thought he could detect a slight crepitating feeling.

"I saw the animal once with the doctor, and she was then in about the same condition as at his previous visit. He had given a most unfavorable prognosis at his first visit, which he only confirmed subsequently. The second day, when I went to see the patient with the doctor, we found her dead, and I made an examination.

"On removing the hide from the abdomen, I found a swelling nearly a foot in diameter involving the cellular tissue, which, by the way, was engorged with serum. On removing the tissue, we found the intestines protruding, dilated to their utmost capacity, and gangrenous. The abdominal muscles beneath and around the swelling were excised, and the intestines cut on the inside. We then found that there was a rupture of the floor of the abdomen, some three inches in length, from forward backwards; that a portion of the large intestine, some eighteen inches to two feet long, had passed through this aperture, and had become strangulated.

"Hernia in the bovine is not an uncommon event in practice, I believe, but is not strangulated hernia rare? I should mention the fact that the intestines within the abdomen were all healthy."

Several of the offices in the Society being vacant, it was voted

to proceed to the election of officers. Dr. Lockhart was unanimously elected 2d Vice-President. Dr. Foote, the present Recording Secretary, was elected to the offices of Corresponding Secretary and Treasurer; and Drs. Lockhart, Coates, L. McLean, Burden and Fields were elected as the Board of Censors. The committee on nominations reported favorably for Drs. William Manz and John Leighton, and these gentlemen were elected to membership. Dr. Coates was appointed essayist for the next meeting, to take place Tuesday evening, October 10th, at the American Veterinary College. The meeting then adjourned.

H. T. Foote, M.D., V.S.,
Secretary.

OBITUARY.

E. V. RIPLEY, V.S., OF PORTLAND, ME.

Dr. G. Bailey informs us of the death of this good practitioner, which took place at Colorado Springs on August 18th, where he had gone but a short time before, in the forlorn hope of restoring his failing health. He was 58 years of age at the time of his death.

Speaking of him, Dr. Bailey says: "Generous to a fault, his sympathies were easily enlisted, and his services never sought in vain. He will be greatly missed from a busy practice in this vicinity, and the profession and the public share alike in the loss of a most conscientious and useful practitioner."

DECISION

IN AN ACTION FOR DAMAGES IN A CASE OF FRACTURE OF THE DORSAL VERTEBRÆ OF A HORSE DURING SURGICAL OPERATION.

The complaint in this action should be dismissed and judgment given for the defendant, for the following reasons:

1st.—The plaintiff has failed to prove that the defendant killed the horse mentioned in the complaint,

2d.—The plaintiff has failed to prove that the defendant was guilty of any negligence or malpractice in connection with this case.

3d.—Defendant has proven by the testimony of Dr. D. J. Dixon, a veterinary surgeon who has graduated from the American Veterinary College, New York, and who assisted the defendant in the operation performed on plaintiff's horse, that the casting of the horse, and all things that were necessary for the surgical operation, were done and performed in the manner always followed and employed by expert and experienced veterinary surgeons, and that the defendant was guilty neither of malpractice or negligence in the operation performed, and he agreed in the diagnosis made by the defendant and testified that the struggles of the animal after being cast broke its back; and he further testified that it is not an uncommon thing for such accidents to happen during surgical operations on horses, without any fault or miscarriage of the veterinary surgeon performing the same.

4th.—Dr. L. McLean, a veterinary surgeon and graduate of an Edinburgh college, Scotland, and who has practiced as such for more than twenty-five (25) years in the United States and elsewhere, testified that in his opinion, as an expert, the defendant, in the conducting of the casting and the surgical operation performed on plaintiff's horse, was guilty of neither negligence or malpractice, but, on the contrary, that the defendant took every precaution and used every means which a prudent and practical veterinary surgeon would have adopted and used in and about such a surgical operation.

5th.—Dr. C. Burden, also a veterinary surgeon and graduate of the American Veterinary College of New York, and a practitioner of twenty-eight years, in the city of New York, testified that, in his opinion as an expert, the defendant used every means which a prudent and careful veterinary surgeon would have used in the casting of a horse and in the performance of the surgical operation testified to have been performed on plaintiff's horse by the defendant.

6th.—Both the plaintiff and defendant testified that the plaintiff's horse for more than four months was unable and unfit for

work or travel, and was suffering from a disease known as cartilaginous quittor, which necessitated the casting of the horse and surgical treatment such as the defendant applied.

7th.—The testimony of Dr. A. F. Martins, a graduate of the American Veterinary College, New York, and who is the defendant in this action, shows that before the operation the plaintiff told him that it was a case of "kill or cure," to which defendant replied that plaintiff should assume that risk, which he did.

8th.—According to the rules of evidence, the burden of proof is on the party charging a veterinary surgeon with negligence or malpractice. (Greenleaf on Evidence, p. 102, Vol. I., 13th Ed).

9th.—Neither the plaintiff nor any witness for him has testified that they were present at the operation performed, and the testimony of the defendant and his experts directly proves that all things were done in and about the casting and the surgical operation upon the horse in question, were correctly done, and in the manner usually pursued and followed by experienced and learned veterinary surgeons.

NEWS AND SUNDRIES.

Hog Cholora is causing considerable loss in Illinois.

The Swine Plague is existing in Pennsylvania, near Reading, Berks County.

Prolific Cow.—A cow owned in Washington County, Pa., has given berth to five calves inside of a year—twins and triplets.

Texas Fever, about which there was such a scare among farmers and breeders a month ago, is now said to be subsiding.

A Remedy for Trichinosis.—Dr. J. M. Basten claims to have successfully treated four cases of trichinosis with large quantities of glycerine. The treatment is based upon the fact that immersion in glycerine proves fatal to the parasite.—*Journal of Materia Medica.*

Salting Trichinosed Meat.—Salting, M. L. Fourment asserts, is not necessarily fatal to trichinæ imbedded in meat.

These parasites may live in salt provisions for fifteen months. Salting, indeed, often serves to preserve the vitality of trichinæ, as it protects them to some extent from the destructive influence of heat.—*American Cultivator.*

THE CATTLE QUARANTINE.—Mr. Sanders has just returned from his Eastern trip, tired and worn out from the constant travel of the past three weeks, in the discharge of his duties upon the Treasury Cattle Commission. The Canadian quarantine, at Quebec, has been visited, and its practical workings carefully studied by the Commission; sites have been selected for quarantine at Portland, Boston, New York, Philadelphia and Baltimore, subject to the approval of the Secretary of the Treasury, and accommodations for importers at these points will speedily be provided at Government expense. The Commission will as soon as possible, prepare regulations for the government of these quarantine stations, and the Secretary of the Treasury and the Collectors of the ports above mentioned, will be relieved from what has been, for the past two years, a constant source of annoyance to them, on account of the attempt to enforce a quarantine without any provisions for the preparation of suitable quarters for the animals to be quarantined.—*Breeders' Gazette.*

INOCULATION OF BOVINE TUBERCULOUS MATTER IN MAN.—TWO Greek physicians have recently made a direct experiment to see whether bovine tuberculosis could be inoculated in man. The subject of the experiment was a common laborer, who, in consequence of arterial occlusion, was slowly perishing from progressive gangrene of the leg. In other respects the patient was healthy and a careful examination showed that the lungs were in normal condition. As he refused to submit to the amputation of the limb, pronounced necessary to save his life, his medical attendants decided to test, by direct experiment, whether tubercle can be propagated from phthisical cows to man by inoculation. A quantity of tuberculous matter was accordingly injected into the circulation, whether with or without consent, is not specified. The man lived about six weeks, then died of the blood-poisoning inseparable from progressive gangrene. The autopsy disclosed

the existence of well-defined tuberculous deposits, without abscess or other disease of the pulmonary organs, very small, evidently very recent, and, as the daring experimentalists argued, the direct result of the inoculation.—*Medical Record.*

New Veterinary School.—Dr. C. P. Lyman, F.R.C.V.S., late Veterinary Surgeon to the Agricultural Department in Washington, and well known to the profession for his investigations in pleuro-pneumonia, at home as well as abroad, has been appointed Professor of Veterinary Medicine to Harvard Medical College, where a new veterinary school will be opened this fall. The veterinary students will be requested to attend three years. The veterinary branches will be taught in the various departments of the university, but the special theoretical and practical instruction will receive attention in the newly formed department of veterinary medicine, under the entire supervision of Prof. C. P. Lyman.

Another Resuscitation and Removal.—The New York College of Veterinary Surgeons has removed from the former college building to the College of Pharmacy, in East Twenty-third Street, where the f ll session will open on the 4th of October, the lectures of the College of Pharmacy taking place in the evening, and those of the College of Veterinary Surgeons in the morning and afternoon. The arrangement is a convenient and fortunate one for both parties. The faculty remains unchanged, and in addition to the regular corps of professors, a large staff of special lecturers has been secured by the efforts of President Rawson; and the veterinary students will also have access to the practical chemical course of the College of Pharmacy.—*Medical Record.*

A Step Forward.—The *Prairie Farmer*, one of the most valued of our exchanges, comes to us under the name of the *Peoples' Illustrated Weekly and Prairie Farmer*, and changed in form to sixteen pages. The illustrations are profuse and elegant, the reading matter most varied and interesting, consisting of stories, sketches, humor, news, and editorials on agriculture, horticulture and current topics. It will undoubtedly commend it-

self more than ever to the intelligent public. While in size, illustrations and reading, it is abreast with periodicals selling at $4.00 per year, the price remains at $2.00 per year, or five cents per copy. Address Prairie Farmer Publishing Company, Chicago, Ill.

EXCHANGES, ETC., RECEIVED.

HOME.—Rural New Yorker, Medical Herald, Turf, Field and Farm, Ohio Farmer, American Agriculturist, Medical Record, Breeders' Gazette, Prairie Farmer, American Cultivator, Country Gentlemen, National Live Stock Journal, &c.

FOREIGN.—Veterinary Journal, Veterinarian, Clinica Veterinaria, Archives Veterinaires, Recueil de Medecine Veterinaire, Journal de Zoötectnie, Australian Veterinary Journal, &c., &c.

JOURNALS.—Prairie Farmer, Our Dumb Animals, Minnesota Farmer, Louisville Farm and Fire Side, Peoples' Weekly, Home Farm, Iowa Farmer.

COMMUNICATIONS.—P. Z. Colsson, J. Hopkins, M. R. Trumbower, O. H. Flagg, W. Manz, E. R. Evans, J. C. McKenzie, N. S. Townshend, M.D., S. V. Ramsay, O. L. Hendershott, J. Stickney, B. McInnes, R. McLean, G. C. Faville, W. Cutting, C. H. Peabody, Geo. Bailey, R. Wood, W. Bryden, W. F. Derr, J. B. Galt, L. H. Tourtelotte, G. Agersborg, G. Kidney, J. F. Winchester, J. C. Michner, N. E. Rheinhart, W. Zuill, J. Rice, C. Crowley, E. F. Thayer.